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EXAMINER

OH, TAYLOR V

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

It is noted that applicants have filed an Amendment after the Final Rejection on 12/17/2008; applicants' attorney has addressed the issues of record. The proposed amendment will be entered; however, it is not in a condition for allowance.

The Status of Claims

Claims 1,4-28,30-31,34,36-70 are pending.

Claims 1,4-28,30-31,34,36-49,69-70 are rejected.

Claims 50-68 are withdrawn from consideration.

Claim Rejections-35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of Claims 1,4-28,30-31,34,36-49,69-70 under 35 U.S.C. 103(a) as being unpatentable over Haeberli et al (U.S. 4,228,297) in view of Grant et al (Chemical Dictionary, 1990, p. 11-12).

The rejection of Claims 1,4-28,30-31,34,36-49,69-70 under 35 U.S.C. 103(a) as being unpatentable over Haeberli et al (U.S. 4,228,297) in view of Grant et al (Chemical Dictionary, 1990, p. 11-12) has been maintained for the reasons of the record on 4/16/08.

Applicants' Argument

2. Applicants argue the following issues:

- a. In all the examples, the first and the second catalyst were different from each other as described in the passages (col. 5, lines 15-18); however, applicants are also aware of the second catalyst which may be selected from the classes of compounds listed for the first alkaline catalyst and it is unclear to the applicants that the second selected catalyst can be the same as the first one;
- b. None of the prior art provide even hint that the use of phosphoric acid in removing the alkali metal catalyst residues is superior to that of acetic acid since acetic acid did not produce a filterable precipitate; in fact, no solid precipitations were observed.
- c. There is no teaching in the prior art that crystallization is to be used when the formation of the precipitate is by the neutralization step.

Applicants' arguments have been noted, but the arguments are not persuasive.

First, regarding the first argument, the Examiner has noted applicants' argument. However, as applicants have already acknowledged that the second catalyst may be selected from the classes of compounds listed for the first alkaline catalyst, it does not matter where the

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piece of information relevant to the claimed invention is found in the prior art; it can be from the examples or the specification of the prior art. Nothing changes a fact that the prior art expressly teaches that the second catalyst may be selected from the classes of compounds listed for the first alkaline catalyst; in other words, the first and the second catalyst can be the same or they can be different from each other. Therefore, unlike applicants' argument, the prior art is still relevant to the claimed invention.

Second, regarding the second argument, the Examiner has noted applicants' argument. However, applicants have already admitted that the use of acetic acid in the claimed process was found to be workable and yet, applicants emphasize that there is a superiority of using phosphoric acid in removing the alkali metal catalyst residues compared with the acetic acid. Furthermore, in spite of unobserved precipitations, the second prior art Grant et al does teach various common acids available for a reaction process, two of which are acetic acid and phosphoric acid. The acetic acid in the prior art has the same function as the phosphoric acid in the claimed process; regardless of the type of the acid to be used, the only role of the acid is to neutralize the base in the process. Furthermore, the phosphoric acid is one of the well-known acids in the art as shown in Grant et al (Chemical Dictionary, 1990, p. 11-12). Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use the phosphoric acid as an alternative to acetic acid for the neutralization step in order to facilitate the prior art process by routine experimentation. This is because the skilled artisan in the art would expect such a modification to be feasible and successful as shown in the prior art. The examiner is looking for the unexpected result: for example, the difference in yield as a result of the claimed

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process when the use of phosphoric acid in the claimed process is compared with that of acetic acid in the prior art process. However, the specification of the claimed invention reveals the followings (see page 50, lines 1-9):

precipitations were not observed, indicating that the potassium acetate¹³ was not precipitated out as easily as the potassium phosphate salts.

[000175] Additional acetic acid (1.55 g) was added and then the product was washed twice with water (182 g and 177 g) at 80-96°C. A clear interface was noted after approximately 7 to 9 minutes, although the organic product layer was cloudy. The aqueous layers were discarded. The organic layer was further dried by vacuum stripping the mixture at 20 mm Hg and at 120°C. The 3,5-di-tert-butyl-4-hydroxyhydrocinnamic acid, isooctyl ester product weighed 587 grams.

From the above, the additional use of acetic acid and the drying process of the organic layer do provide a considerable yield of desired product. Therefore, unlike applicants' argument, the prior art is still relevant to the claimed invention.

Third, regarding the third argument, the Examiner has noted applicants' argument. However, regardless of the formation of the precipitate, the prior art does teach the crystallization after the isolation of the filtrate as shown below(see col. 10, lines 48-56):

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three hours. The vacuum was then released with nitrogen, and the reaction mass was cooled to 70° C. and acidified with 3.0 g of glacial acetic acid. 132 g of ethyl alcohol were added to the melt, and the resultant solution was clarified. The filtrate was cooled to 28° C. and seeded with 0.5 g of thio-bis-{ethylene-3-(3,5-di-t-butyl-4-hydroxyphenyl)propionate}.

The reaction product crystallized and the resulting slurry was cooled to 16° C. The product was isolated on

Furthermore, the claimed languages do not exclude the employment of the crystallization in the steps of the claimed process. Also, the expression of the terms “ the method comprises” in the claims would suggest the possible inclusion of all kinds of potential limitations relevant to the claimed invention. Therefore, unlike applicants’ argument, the prior art is still relevant to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Janet Andres can be reached on 571-272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Taylor Victor Oh/

Primary Examiner, Art Unit 1625

3/23/09